

CLAIMS

1. A film forming method comprising:
reacting a hafnium organic compound and a silane-series gas in a reaction vessel, thereby depositing a hafnium silicate film on a substrate.
2. The film forming method according to claim 1, wherein
a heated atmosphere is established in an interior of the reaction vessel, and the hafnium organic compound is supplied into the reaction vessel in a vapor state.
3. The film forming method according to claim 1 or 2, wherein the silane-series gas comprises monosilane gas and/or disilane gas.
4. A film forming method comprising:
depositing a hafnium compound film containing hafnium and oxygen on a substrate; and
annealing the hafnium compound film, obtained by the depositing, in an atmosphere of a compound gas of nitrogen and hydrogen.
5. The film forming method according to claim 4, wherein the compound gas of nitrogen and hydrogen is ammonia gas.
6. The film forming method according to claim 4 or 5 further comprising:
depositing a silicon nitride film after the annealing of the hafnium compound film.
7. The film forming method according to any one of claims 4 to 6, wherein the hafnium compound film is a hafnium silicate film deposited by reacting a hafnium organic compound and a silane-series gas.

8. A film forming apparatus comprising:
- a reaction vessel into which a substrate is loaded;
 - a heating mechanism that heats an atmosphere in the reaction vessel;
 - a first gas-supplying means for supplying a vapor of a hafnium organic compound into the reaction vessel;
 - a second gas-supplying means for supplying a silane-series gas into the reaction vessel; and
 - a controller that controls the heating mechanism and the first and second gas-supplying means to deposit a hafnium silicate film on a substrate by reacting the hafnium organic compound and the silane-series gas in the reaction vessel.